

## Warpage optimization on front panel housing by using glowworm swarm optimization (GSO) approach

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### ABSTRACT

Injection molding process is a quite popular process in current industries to produce and replicate a various shape of plastic parts. However, the process involved a lot of processing parameters which is importance to control in order to minimize defect such as warpage. Nowadays, there are a lot of optimization approaches that can be employed to obtain the suitable processing parameters setting to overcome this kind of defects. In this study, an artificial intelligent optimization method which is Glowworm Swarm Optimization (GSO) approach has been carried out to minimize warpage condition. The front panel housing was tested with the selected processing parameters of melting temperature, cooling time, packing pressure and packing time. Based on the Autodesk Moldflow Insight (AMI) simulation results warpage value is 0.26mm and GSO approach demonstrated a warpage reduction and the results were 0.1625mm. Thus, by utilising GSO in minimising warpage on the molded part can be applied in injection molding industries.

### KEYWORDS

Injection molding process; Injection molding industries; Parameters setting; Autodesk Moldflow Insight (AMI)

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